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NOTICES.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 1st of each month during the Lantern Season, October to March, price Two Pence, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

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NOTES.

A Happy New Year to All.

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Our Index.—Instead of issuing the index with the January number, as in foregoing years, it has been decided to extend the present volume (12) until the end of the Session, and by virtue of this Journal being now issued from October to March inclusive, as stated some months ago, the index will appear with the March issue.

◆ ◆ ◆

Croydon Camera Club Exhibition.—The fifth annual exhibition of this club will be held from February 19th to 26th, full particulars of which may be obtained from the hon. sec., Mr. W. H. Rogers, 46, Bensham Manor Road, Thornton Heath.

◆ ◆ ◆

Falmouth to be Advertised by means of the Lantern.—The Advertising Committee of Falmouth recommend that five pounds be spent in purchasing lantern slide views of Falmouth for lecturing purposes.

Stonehouse Exhibition.—The Stonehouse Camera Club, although one year old, has just held a most successful exhibition; altogether there were about two hundred entries in conjunction with four classes, upwards of one half being from the members. In Class C, for lantern slides, the silver medal was awarded to Mr. A. J. Catford, bronze medal to Mr. F. W. Tucker, and a certificate to Mr. J. C. Smith. The exhibition was held on the 13th and 14th ult.

◆ ◆ ◆

Photographic and Optical Trades Exhibition.—The third exhibition of the above will take place in the Portman Rooms, Baker Street, London, W., from April 11th to 19th. These exhibitions, which are held every second year, afford excellent means for manufacturers bringing their goods before retail dealers. This year a special section is to be devoted to spectacles, telescopes, microscopes, etc. Visitors will find these exhibitions both instructive and entertaining, for not only is the Imperial Band in attendance, but numerous lantern exhibitions are also given. Full details may be obtained from Mr. Arthur C. Brookes, Harp Alley, Farringdon Street, E.C.

◆ ◆ ◆

The Lantern in Edinburgh Schools.—There has of late been a good deal of discussion respecting the wisdom of using the lantern in Edinburgh schools. Mr. S. S. Laurie, who is strongly in favour of it, suggests that all that is most instructive and most stimulating can best be learned by the help of lantern slides. The late Sir Edwin Chadwick (he explains) said to me when I was a very young man, "Take up some one point in education and hammer away at it until you are voted a bore, and you will make a reputation." He advises any young aspirant to take up and emblazon on his flag, "Lantern slides well drawn and well coloured for schools," and call it the new education, when he will have distinction thrust upon him.

◆ ◆ ◆

Temperature of the Acetylene Flame.—The temperature of the acetylene flame is variously estimated at between 2,100 and 2,420 degrees. But the experimental values so far obtained vary from the melting point of platinum down to 1,400 degrees. That some parts of the flame possess a temperature higher than the melting point of platinum may be proved by introducing very fine platinum wires into it, and showing that they melt. Mr. E. L. Nichols has made some careful measurements by means of thermo-couples, consisting of fine platinum and platino-rhodium wires. The temperature of the hottest portion thus obtained was found to be 1,920 degrees. An ordinary gas jet tested under the same conditions gave a temperature of 1,780 degrees, or a few degrees above the melting point of platinum.

◆ ◆ ◆

Umbrella Lantern Screen.—A patent has lately been taken out for a portable lantern screen, which opens up flat, much after the style of opening an umbrella. Up to the time of going to press, we have not heard that any dealer has placed it upon the market; but when it is, it will doubtless prove of use to many exhibitors.

◆ ◆ ◆

Cameras and Lanterns.—Two interesting shilling books on the above subjects have been published by Messrs. Cassell & Co., Limited, London. These books, which are edited by Mr. Paul N. Hasluck, are collated from about 20,000 columns of the weekly periodical named *Work*, to which several pages of new matter has been added; thus making both books text-books upon the subjects dealt with.

◆ ◆ ◆

The Thornton Film Company.—We are informed by Mr. F. Cooper, 12, Bowker's Row, Bolton, that he has been appointed official liquidator for the voluntary winding up of this company. If the scheme of reconstruction which is under consideration be carried through, it is said that creditors will be paid in full and the business continued.

◆ ◆ ◆

Three Hundred Slides in Two Hours.—Those who like to see slides following each other in rapid succession, would have been delighted if they had attended a two hours' lecture on "Sport and Travel," which was lately given at Kettings, in Scotland. Some 300 slides were projected at the rate of one every 24 seconds.

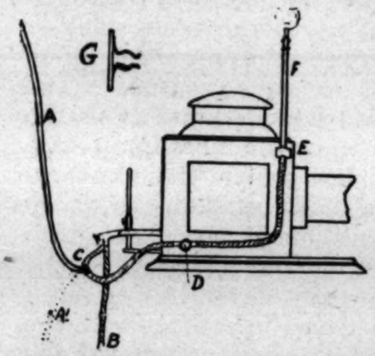
◆ ◆ ◆

"Shifts for a Living among Animals."—A delightful lecture by Professor Bottomley, M.A., F.L.S., brought the Cardiff Y.M.C.A. lecture session to a close at the Cory Hall. The subject of the lecture was "Shifts for a Living among Animals." The lecturer presented some vivid pictures of the struggle for life in the animal kingdom, showing how nature, "red in tooth and claw," assisted various forms of animal life to attack their prey, and in turn to assist their enemies.

Let There Be Light.

DURING a lantern exhibition, and when the hall is in darkness, instances have been known where for some reason or another it has been desirable that a light be obtained other than that in the lantern itself. The controlling of the lighting should be in the hands of the lanternist, but the usual method appears to be to notify the hall-keeper or janitor, who thereupon produces the necessary illumination. At least one instance is on record where a well-known lanternist finding it necessary to procure a light, and not wishing to shout out to the hall-keeper his instructions, thought it better to send his assistant quietly to the party under whose control the lights were. Unfortunately, however, the said assistant in his anxiety to save time knocked against and nearly upset the lantern outfit, and in consequence considerable delay resulted in again fixing up and adjusting the apparatus.

Mr. J. L. Huskinson, of Chichester, being a firm believer that the lanternist should at least control some of the illumination in a hall, has so fitted his own lantern that he can at a moment's notice obtain a light immediately above his lantern. This he effects in a simple manner. On the lower part of his lantern he has screwed one of Butcher's gas taps shown in the sketch at D, and at the upper part a socket E. Into this socket E is set a piece of brass tubing F, into the extreme end of which is secured a burner. This tubing is unshipped for packing up purposes.



To further explain the fittings, A and A1, respectively, represent the supply of house gas either from a bracket or a cylinder, which tubing is connected to a T piece at C; whilst B represents the oxygen supply.

During the past few days we have added the above attachment to our lantern, but in place of the socket E we have made a spring clip of the style shown at G, which perhaps has the advantage of allowing F to be disengaged quicker; whilst with it the rubber tubing need not be disconnected from the brass rod.

Light from Oil Lamps.

THERE is probably no lantern worker but who has at some time or other had to employ an oil lamp as an illuminant in his lantern, and doubtless it has been noted that there is practically one time only when his lamp burned with entire satisfaction—that being the first time it was used after coming from the makers. Then everything was perfectly clean; there was no deposit in the chimney and no traces of oil on any part of the outside of any portion of the apparatus.

To keep a lantern oil lamp in perfect condition—and perfect condition means well burning without the slightest smell—it is not only necessary that it be thoroughly cleaned after each time of using, but also that the lantern itself be cleaned out, for it is surprising how the smell will lurk around the lantern body.

The chimneys of oil lanterns are invariably provided with a flat top slightly removed from the sides of the chimney, and this, unless kept scrupulously clean, draws up as it were the flame and causes it to smoke without giving out its maximum of light.

During the course of some experiments it has been found that if the wick channels be set at

a slight angle

instead of being quite parallel with the sides of the lantern, more even illumination is obtained.

A short time ago we spent the evening at a friend's house during the time that he was giving a children's exhibition of dissolving views with a couple of oil lanterns. Our friend had previously explained to us that he was now very careful to *wipe* off all traces of oil before he lighted up his lantern and that by this means he considered that he had entirely got over the troubles of smell. During the early part of the performance everything went first class, and it happened that at the end of about half an hour the stock of slides ran out. Our host asked us if we would bring in a further supply which was lying on the mantelpiece in an adjoining room just across the hall, and we went to get them, but on our again entering the exhibition room—Oh, the smell! We quietly mentioned the matter to our friend, but he emphatically said there was no smell, so we asked him to go out in the fresh air for a moment and then come in again. This he did; but as soon as he entered the room he went to the lantern, put in the curtain slide, and drew the exhibition to a quick close. The audience were invited into another room and the windows of the lantern room opened. Our friend was astonished, for he had noticed nothing until he had been out of the room and into the fresh air. He is now convinced that too much care cannot be bestowed on the care of an oil lamp and is satisfied that no amount of dry wiping will suffice to keep his lamps in order, and that an application of hot water and soda between each time of using is absolutely necessary if one wants to give a lantern exhibition with oil lamps with perfect comfort.

* * *

Clouds in Lantern Slides.

By **A. M. BARRY.**[*]

THERE are few lantern slides that would not be benefited by the introduction of a suitable cloudy sky, and almost as few into which it could not be introduced with very little trouble.

Slides the skies of which are represented by bare glass—and they are largely in the majority in this country—need no further preparation, but are ready for the application of the clouds at once, and the deposit in those that have been toned down is easily removed by the local application of Farmer's or other reducer.

The first essential is a good supply of cloud negatives, the more varied the better, as although the sky of one particular negative might be equally suitable for a number of slides, variety in the skies is as necessary as in the subjects included in an exhibition.

As by the method that I advocate, the clouds are printed on the cover glasses, and in binding the film of the cloud is placed in contact with the film of the slide, it will be evident that if printed from the same negative or in the same way from any two negatives, one or other will on the screen be reversed. Where, therefore, the printing is done by contact, and the slides from negatives on glass, the cloud negatives must be on films capable of being printed with the celluloid or whatever the film substance may be, in contact with the plate which is to be the cover glass; or where cloud negatives on glass must be employed, recourse must be had to stripping. The stripped film may either be strengthened by being brought into contact with a slightly moistened sheet of gelatine, so as to be available for printing from either side, or transferred, reversed, to a glass plate.

Where the copying is done in the camera no such difficulty is found, nor is stripping required, as it is only necessary to expose the cloud negative through the glass; that is, with its film side toward the light instead of toward the lens. Whichever method may be adopted, better results will be obtained by the making of many cloud covers at one time, when "the hand is in," than when they are made singly, one or two just as they are wanted; and for most subjects exposure and development should be such as to leave the cloudy sky on the thin rather than on the dense side; for some subjects, indeed, they should be hardly more than indicated.

With a stock of cloud covers on hand there need be no difficulty in selecting one for any particular slide. It goes without saying that the sky with its contained clouds must be lighted from the same direction as the objects included in the slide, but there are other considerations that, not being so patent, are too often neglected. Not the least important of these is what may be called the

expression of the sky;

the impression that it conveys through the eye to the mind as to the time, whether late or early in the day; and even, although in a less degree, as to the season. The "expression" may also include hints as to the recent past, the present, or the more immediate future conditions under which the sky was photographed, and should be such as is in keeping with such conditions in the slide which it is to adorn.

A suitable cloud or sky cover having been selected, it should be placed in contact with the slide, film to film, and the horizon line of the latter roughly outlined on the glass side of the former. For this purpose nothing answers better than Faber's "glass pencil," with which it is as easy to write on glass as to write on paper with an ordinary pencil. In making the outline no notice need be taken of trees or objects that are transparent or lightly translucent in the negative, as being darks in the slide, the cloudy sky will not appear behind them; indeed, the outline can hardly be too roughly drawn. All below the outline should now be removed by any convenient reducer. I generally employ either Farmer's or the ammonium persulphate, and washing in a few changes of water completes the cover glass.

The slide and its cover may now be bound together in the ordinary way with a suitable mat between, but the slide maker, who is also an attentive observer of Nature, may see possibilities of still further improvement. He knows something of the additional beauty that comes to his landscape in the ever-changing light and shade from a cloudy sky, and desires to introduce some of it into his slides. For this purpose the "Agfa," or some other one-solution reducer and intensifier may be employed with advantage. A few strokes with a brush of suitable size, charged with the intensifier, will deepen a shadow or make one where a passing cloud shows that it should be; while the reducer, applied in the same way, will increase the intensity of lights already there or produce them where they are indicated.

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[*] *Amer. Amat. Ph.*

In this way, with a minimum of labour and skill far less than the description would lead one to believe, slides that were barely passable may be made to appear on the screen as if of the very highest class.

* * *

Improved Enlarging Apparatus.

B. E. D.

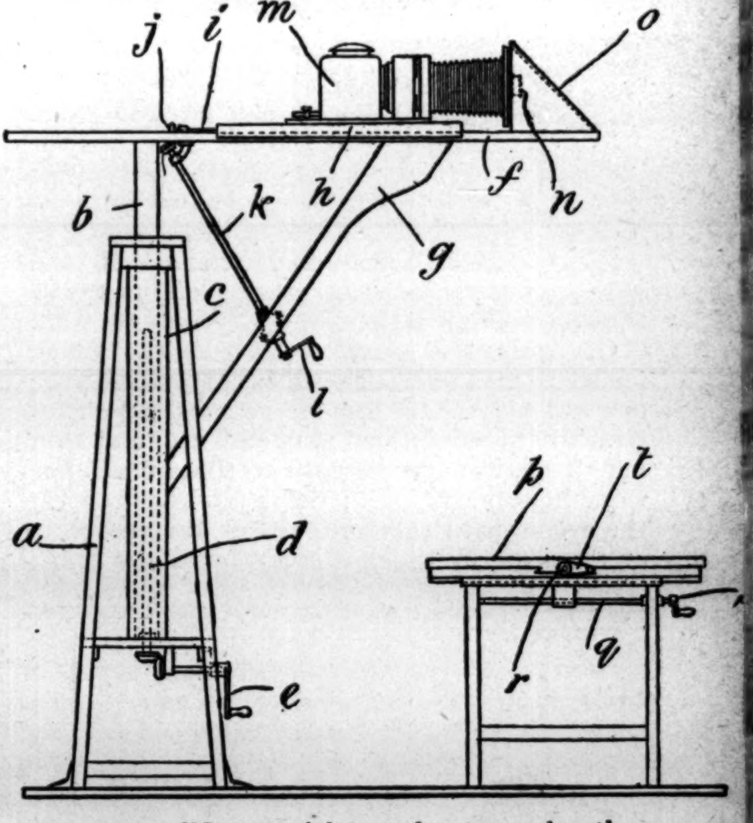
THE winter evenings are, as a rule, occupied to some extent by devoting part of the lanternist's time to enlarging. We are most of us familiar with the ordinary type of enlarging lanterns, and as the following piece of apparatus, which is certainly out of the ordinary, came before my notice, I thought a brief description of it would be of interest.

Although the apparatus is chiefly arranged to enlarge designs for weaving subjects, it will be apparent to everyone that its application and scope in the photographic branch of the trade is great.

The apparatus, as shown in the accompanying sketch, is the invention of H. Macintosh, and has evidently been well worked out with a view to giving the operator more or less complete control over the lantern from the table upon which the photographic material or enlargement is to be made.

As will be seen in the sketch, the apparatus consists of a standard A secured to the floor at its base, and is fitted with a central slot B, arranged to be vertically adjusted in the guide C by the screw D turned by the bevel wheels and winch handle E. A platform F is fixed on the top of the slide B, and its outer end is supported by the strut G, fixed between the underside of the platform F and the side of the slide B. A sliding saddle H is mounted on the platform F, and is adjusted longitudinally thereon by means of the screw I, bevel wheels J, shaft K, and its winch handle L. An optical lantern M is mounted on the saddle, and its objective N is fixed in a stationary position opposite the mirror O inclined at an angle of 45 degrees on the platform F.

The object to be projected is placed on a slide in the lantern, and focused on to the horizontal table P below, by adjusting the saddle H, until the projected image is in focus. The image is reduced or enlarged to the size required by adjusting the slide B. In order to bring the image on to the exact position required, the top of the table is mounted on two cross slides at right angles to each other, capable of being adjusted horizontally by the screws Q R, fitted with winch handles S and T.



From the foregoing description it will be seen that the instrument promises many interesting, if not novel points. In the first place the objective is fixed, at least in the horizontal direction. Thus the picture may be projected upon the table and focused, neither the focusing nor vertical adjustment interfering with the vertical alignment; second, the table is provided with slides which give it a motion in a direction at right angles to one another; and lastly, all the handles for manipulating the various parts of the apparatus are within easy reach of the operator.

A CAT standing at the doorway of her rightful home, but terrified by a passing dog, forms the subject matter of the present silhouette slide. The mechanism about to be described will enable the operator to exhibit upon the screen all the amusing attitudes assumed by pussy at the approach of danger.

On a sheet of glass X (Fig. I.) the whole model is mounted. The different parts of the cat will be seen in Fig. III., C being cut out of $\frac{1}{8}$ inch hard wood, and B, D, and E out of thin metal. D, forming the head of the animal, has three holes made in it; the large one to form the eye socket; the top one for the reception of the rivet, by which it is pivoted to the body; and the lower one for the reception of one end of an elastic band or steel spring shown at K in Fig. II. D is bent up at right angles at the dotted line A 1. B is bent up at right angles at the dotted line B 2. E, something in the shape of a saw, is pierced with two holes, and forms a portion of the tail.

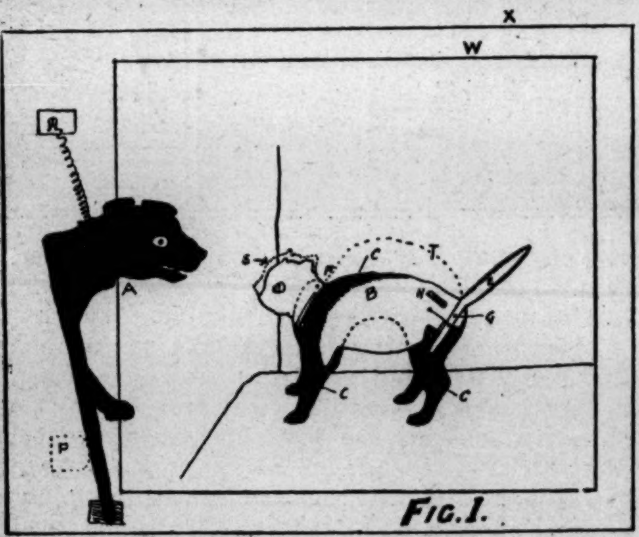


FIG. 1.

Figs. I. and II. show the cat in the two extreme positions, viz., in the normal and the frightened attitudes. Referring now to Fig. I. The metal piece A, forming the dog, is pivoted at its extreme lower end to a small block, glued to the glass. It is held in position by a spring attached to the collar at one end and to a block at the other end, also glued to the glass. I may say in passing that this spring answers as a representative of a chain by which the dog appears to be led by its owner, not in view. The base of the cat C is glued to the glass, and on this is mounted all the other parts; the head being pivoted at R, and the movable portions of the body and tail by one and the same pivot at G.

Referring for a moment to C (Fig. III.), a stop screw is inserted at J, and another at I; whilst a third screw at L is the point at which one end of the spring or elastic band K (Fig. II.) is fixed. The glass X, with the model mounted upon it as shown in Fig. I., is fixed into the framework (Fig. IV.), and is then supplemented with a sliding glass V, carrying upon it the block P; the block V bearing a projecting pin, and the shadow Z. It should be noticed that the shadow of the cat is lined upon the fixed glass, as shown in Fig. II.; but the shadow of the dog must be drawn on the movable glass, so that it moves forward as the dog is made to approach the cat.

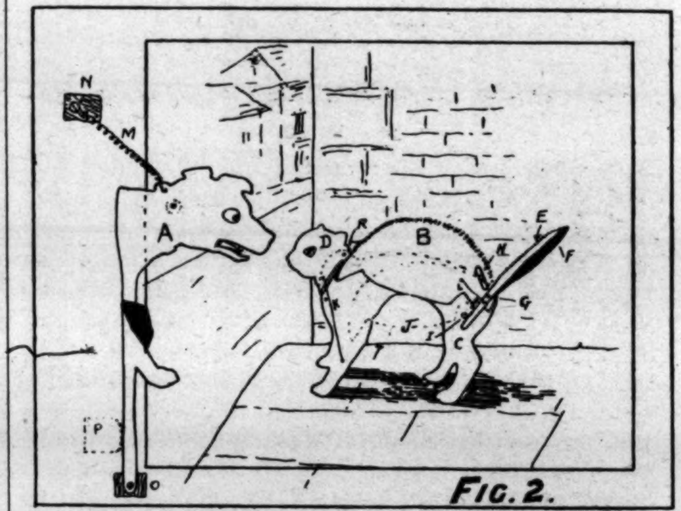


FIG. 2.

Let us observe the action of a perfectly made slide. When the glass is drawn out to its full extent, the position of all the parts will be as shown in Fig. I. The act of pushing the sliding glass in will cause the block P to press against the support of the dog, carrying the latter forward into the position shown in Fig. II. Meanwhile, the pin projecting into the slot at H, passing in a horizontal direction from left to right, will cause the plate B to be raised, and the left-hand end of B will come into contact with D, raising it from the position it occupies in Fig. I. to the position indicated by the dotted line at S. At the same time the cat's tail E will be carried round on the fixed pivot G till its lower end comes into contact with I, when the two parts of the tail E and F will be automatically opened after the manner of a pair of scissors. The effect is further increased by the fact that the pupil of the cat's eye becomes enlarged as the head is raised from the first to the second position. This is done by painting two separate dots to represent the pupils on the fixed glass, one being hidden behind the cat's head, whilst the other is visible through the hole forming the socket.

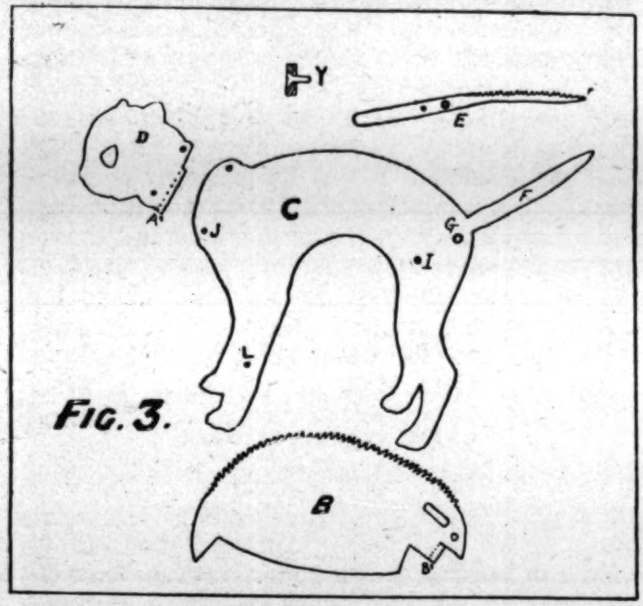


FIG. 3.

If the glass is now drawn back the following movements will take place: The dog will be drawn back, being apparently restrained from hostilities by the chain M held by its invisible owner. The pin in the slot H will slide to the top end of the slot, allowing the plate B to turn on G, and fall into the position indicated by the dotted line J; the spring or elastic band K will draw the head of the cat downwards till its lower edge comes into contact with the stop pin, and the spring or elastic band L will draw the lower portion of E upwards till it butts against the shoulder B 1, B (Fig. III.). Thus the tail will assume a normal size, E being hidden behind F, whilst the back will be lowered to its original position. The direction in which the dog is made to look is regulated very much in the same manner as the cat's eye, viz., two separate spots are painted upon the fixed glass, but it should be noticed that in Fig. I. the spot is so placed as to come in the centre of the eye opening, whilst in Fig. II. it is nearer to the front, giving the effect of the dog's attention being particularly directed to the cat. A suitable background sketched upon the fixed glass completes the slide.

When fitting together it is best to put the glass X into the framework, then mount the parts shown in Fig. I. upon it. This having been done, the next thing is to slide the movable glass into position, and mark in some way upon the outside the proper position for the block P. Now withdraw the glass, take the block and pin Y (Fig. III.), and place the end of the pin in the slot H, glue having been applied to the block. The block P is now glued to the inner side of the sliding glass which is slipped into position when Y is made to adhere to the inner surface by means of a knife.

In the present arrangement the dog is more or less in view all the time. It is obvious, however, that by having the block Q (Fig. II.) a little further to the left, and also the block N, the dog will be made to disappear altogether when the sliding glass is pulled from right to left. If, again, it is thought desirable to give a greater forward motion to the dog, this may be done by having the block P a little closer to the point at which the support of the dog is pivoted to the block O; thereby giving a greater leverage to the portion forming the dog. Fig. I. shows the model upon the glass without the wooden framework, and the inner line W indicates the opening of the mask, if one is used.

Unlike the usual slipping slides, the whole effect is not gained by pushing the glass rapidly backwards and forwards, for at any intermediate point the subject may be exhibited, and we may add that by a gradual inward movement of the sliding glass the dog may be made to approach the cat in a gingerly manner, the latter raising her back, and bushing her tail in a very amusing but natural manner.

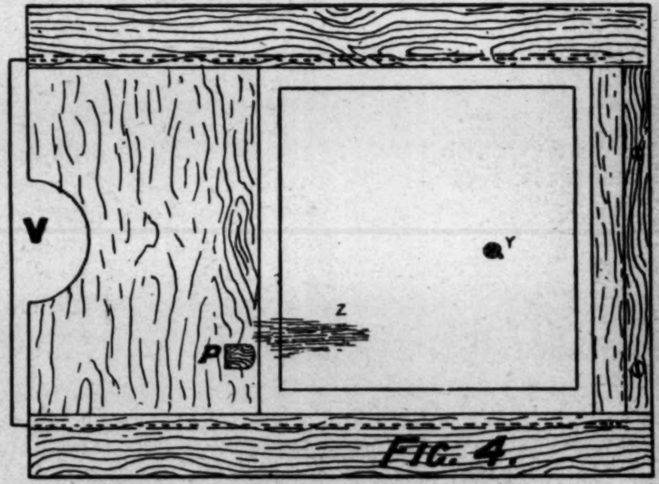


FIG. 4.

Work with the Lantern in India.

By MRS. BRANDER.

WE have much pleasure in reproducing the following from the pen of Mrs. Brander, in the *Indian Magazine.*—ED

About ten years ago, a friend in the National Indian Association offered me a camera for my educational work in India. The offer was tempting, but I feared that I should spend too little, or too much time on photography, and most regretfully I declined the present. But my friend was not discouraged; the next offer was one of an optical lantern, and that I unhesitatingly accepted, and have found most useful and helpful. My Indian head boy at once adopted what he called "our lantern," learned all its ways, and was never too tired, at the end of the longest day's work, to set up the screen, light the lantern, and manage it for me. I found all my Hindu assistants, and many other kind friends, willing to translate into Indian languages and deliver the lectures and explanations which I wrote and obtained about the pictures, and many a happy and profitable hour have I spent with that lantern. My stock of slides has gradually increased, and now includes pictures of our late dear Queen and her palaces, several other members of the Royal Family, a large number of scenes, buildings, persons, etc., in India, Cashmere, China, Japan, England and America, and a series of laughable ones about an elephant, which invariably delighted the small Hindu.

Many a show have I given in my own house to Indian ladies and children, and sometimes to English children.

Other entertainments

were given to teachers and scholars in colleges, schools, verandahs, and sometimes in the open air. The lantern almost always accompanied me on my tours up-country, and the wonder and delight it aroused in remote places were enjoyable and amusing. I remember, at the end of a show in a town far from any railway, a Brahmin boy exclaimed, "Oh, Madam! you must stay a week, and show us pictures every night!" One of the first entertainments I gave was to some Hindu ladies, on a "A Trip to England," illustrated by slides of a steamer, all the places that it would touch at between India and England, and views of London and England. This aroused so much interest that when, soon after, a man-of-war came into the harbour, several of my audience persuaded their husbands to take them on board, and one of the ladies wrote a good description of the man-of-war for an Indian journal. The lecture about the Queen was very popular, and was given several times—once to *purdah* Mahomedan women, who assembled on my housetop after dark. I chose this place because it was strictly *gosha* and yet cool. On another occasion I was preparing to give a lecture to a number of Hindu women in a high school at Bellary. A Brahmin widow, all shaven and shorn, as is their custom, came to the door, looked at the crowd of women, and said to me, "Are you going to teach them?" "No," I said; "I am going to tell them about the Queen, the Empress of India, and

show some pictures

of her." "What!" said the widow; "about the great white Queen across the water?" and in she came to see and hear. Another old Brahmin widow in Madras amused me. I was, with the help of some movable slides, explaining the solar system. The old widow had apparently come to the lecture with great reluctance, probably to bring some younger woman. She kept apart, and drew her cloth closely around her, as if she feared the touch of defilement. But, as the lecture went on, she grew interested, and forgot all about her caste; so much so, that when I had finished, she came up and laid her hand on my arm, and told me not to be angry if she asked me a favour. Of course, I said that she might ask what she pleased, and she entreated that I would let her "see that little moon running round the earth once more." So I had to show that slide again to please her. The lectures with the lantern, on the solar system, were followed up by two visits by some seventy Hindu ladies to the Observatory, where they saw the moon, Mars, Jupiter, Saturn, etc., through the big telescopes.

It was sometimes difficult to arrange for Mahomedan *purdah* women and girls to see the lantern shows, without being seen themselves; but after a time this difficulty was solved by allowing them to sit on the farther side of the screen, where the picture was quite visible to them, and the screen itself acted as a *purdah.* On one occasion I was visiting a young Rani in the Godavery District—a mere girl, and a minor under the Court of Wards. As I had my lantern I arranged to take it with me in the evening, and showed her some pictures. She was especially interested in one of a polar bear, and I explained to her that his white coat was a protection to him, rendering him less visible in the white snow. Soon after I showed a picture in which there was a white pony, when the Rani promptly asked whether the pony also lived in the snow. While my audiences in India were interested in scenes foreign to them, they had also the usual love of the familiar. A group of Brahmins, with their religious marks on their foreheads, an Indian girl pounding rice, or a native cart and bullocks, was always greeted with a hum of approval, or a shout of laughter.

Most of us in India are so busy that such shows as I have alluded to have to be crowded into the fag ends of busy days, but, even so, I feel sure that they are valuable and do much to arouse and stimulate interest, and to make what is taught vivid and real. One who had time might do very much in this way, and I believe that the lantern is being increasingly used in India for educative purposes. One of the Hindu doctors in Mysore succeeded in lessening the fears of the people and in enlightening them regarding plague camps, by showing lantern pictures of such camps. The ignorance and indifference of the people of India on sanitary matters are serious, and nullify much that Government and the doctors try to accomplish for sanitation. I think that a good deal might be done to spread an elementary knowledge of, and an interest in, sanitation among the townspeople and villagers by very simple talks, illustrated by slides of wells, tanks, and other scenes, taken in India.

Wet Collodion Lantern Slide Making.—No. III.

By ALFRED H. SAUNDERS.

If we are making a number of slides, after washing under tap for a short time, to dissolve out the cyanide of potassium (3 or 4 minutes usually suffice), the slides should be placed flat (film side up), in large porcelain or *papier maché* dishes half filled with water, until the number required are made. These slides are now of a dirty yellow colour and require toning to give them a more pleasing appearance to the eye.

Toning may be done with either of the following :—

Chloride of gold.
Bichloride of platinum.

Singly, or both in one bath :—

Potassium sulphide.
Bichloride of mercury.
Nitrate of uranium.

Some makers use one, some another, while others use a combination of the whole. They are prepared with any recognised formula, as for print and paper toning, and to those who have leisure some very interesting experiments may be made.

The simplest toning bath is prepared with :—

Potassium sulphide	2 scruples.
Water	6 ozs.

This placed in a deep ½-plate developing dish tones from 3 to 4 dozen slides. To use—

Take slide from the dish in which they have been standing, rinse under tap, and then place in toning bath. Two may be toned at once; they will soon begin to change colour and appear first a dirty brown, then deeper, until they get to a dirty dark red. From this they change gradually to a bluish green, when they should be removed from the bath and finally washed under tap; then placed in a wood draining rack to dry.

During the toning the dish should be kept gently rocking; black dishes are best, as the tone can be kept under observation better than in one of another colour.

Another toning bath, that I use and can recommend for the beautiful results it gives, is made with :—

1.	Soda sulphate	¼ oz.
2.	Ferricyanide potassium	¼ ,,
3.	Nitrate uranium	¼ ,,
4.	Water (distilled)	60 ozs.

Take parts of the water and dissolve the chemicals in the order above named, mix in same order, and make up to 60 ozs.; then take of

5. Potassium sulphide, a saturated solution,

and pour gently into the above until it appears as though milk is being formed; on the first sign of this milky appearance, stop. Well shake the solution, which will then be opaque with a rich chocolate colour, when it is ready for use and is our stock solution.

This bath requires a dipping bath and dipper in a box. A ¼ plate dipping bath should be two-thirds filled and left, occasionally replenishing from stock bottle as it gets weaker and evaporates. The slide from dish should be rinsed under tap, placed on dipper and allowed to remain in bath till a rich bluish-black tone results. The beauty of this toning bath is that one cannot over-tone a slide; the longer it remains in the bath the richer the results appear to be.

After toning, wash under tap and place in rack to dry. If the slides are wanted at once the wood rack may be placed on top of stove or kitchen range to dry; they will not run away like gelatine. We have now got a fine grained film, which the slightest touch will injure or scratch, so that we must varnish the slide to preserve it and give a surface for colouring.

I had a curious experience a short while ago, and which I cannot account for; an experience that perhaps others have met with, and may be able to advise the cause and how to avoid in future.

A customer sent for colouring some beautiful slides of the Lakes of Killarney; as soon as I commenced to colour, the film, which was varnished, rubbed up in a manner I could not understand; I tried another slide—same result. No sooner did the brush with colour touch the slide than it worked up. I thought they had not been varnished and applied some; final result, the whole picture disappeared and left clear glass in its place. What is your theory, Mr. Editor, for this?

My formula for varnish is:—

Best white hard spirit varnish ..	2 ozs.
Rectified spirits of wine	4 ozs.

Mix and filter.

Care must be observed in obtaining the spirit varnish right; do not get it from a painters, but from some good manufacturing druggist, and the spirits, from same source, should be of strength:

Alcohol, C_2., H_5., H O.

Any others than these cause a resinous precipitate, or else a varnish that dries soft and streaky.

The process of varnishing is, perhaps, the most tantalising of the whole process, because bad varnishing spoils a good slide. So, before trying on a slide, practice till perfect on pieces of glass.

The requirements are:—

Kitchen range with clear fire.
5 ozs. Cometless pouring bottle, containing varnish.
2 inches wide dusting brush.
Piece of blotting paper on range top.

Put slide, film side up, on range till it gets comfortably warm (not hotter than the mount of the thumb can bear), carefully dust it with brush and use the varnish in the same manner as collodionising, drain back into bottle, and hold slide to fire till varnish is set, afterwards placing on range (not too hot) to harden. It only now remains to put on suitable mask, cover glass, and bind, when slide is complete.

N.B.—A few queries have been addressed to me, to which I will endeavour to reply in my next article.

(*To be continued.*)

Hints to Private House Entertainers.

By THOMAS BYFORD.

A SHEET of white rubber makes a splendid screen, and being wrinkless and opaque it is in every way suitable for private parties. A bamboo frame not more than 6 feet square is recommended. Some lanternists use a 4 feet frame, but it gives to the show a toyish appearance which does not add to the credit of the entertainer. If one lives in London, or a big city, drive up to the house in a vehicle; it stamps the show as being respectable. In a small town where one is well known this is not requisite, the apparatus can be taken by hand.

Don't be fussy, but arrange the preliminaries expeditiously. The chairs should not be arranged as if a large public exhibition were about to be given; let those present sit where they choose.

If the host or hostess suggest refreshments accept their hospitality, it's bad form to refuse.

Don't talk loud when describing the pictures, well bred people speak deliberately and softly, do thou likewise.

Don't point out the merits of certain slides, let those you are entertaining find this out.

Very little applause or laughter will be got out of a private audience, so do not be downhearted if

manifestations of approval

are not indulged in during the progress of the entertainment. Congratulations will sometimes be forthcoming at the finish.

Should the fee not be forthcoming at the close don't ask for it, send in your account a few days later with a request for a remittance.

Evening dress is not requisite, people don't look for unreasonable things from private entertainers.

When one lives in a small town personal canvassing may be indulged in, it often leads to excellent results.

Limelight or acetylene should not be used if the exhibition is on a small scale. The slightest hissing from the former or smell from the latter naturally upsets nervous people at a private gathering, and they quickly beat a retreat.

A perfect oil lamp (Stocks's for example) is best, and it only requires to be kept perfectly clean to obtain good results in the way of a good illuminant and absence of smell.

When oil lamps are used nightly they should be cleaned twice weekly as follows:—Take out the wicks and very carefully shake out any charred pieces of wick. Pour through the burners and over the other parts boiling water in which a little soda has been dissolved. Be sure that the lamp is perfectly dry before inserting the wicks.

Before setting forth see that the lamp (with the exception of the oil) is ready for lighting up. The right quantity of oil should be taken in a can. The best can for this purpose is the kind used by mechanics for their tea and coffee, they are flat and have a screw cap rendering leakage impossible.

Lamp-wicks before use should be steeped in a solution of salt and water and afterwards dried. A more powerful non-smokeless light will be the result; some put salt in the reservoir of the lamp but the result is not so satisfactory as the prepared wicks.

Mica should not be used in lieu of glass for lamps, much light is lost thereby. It is used because it is crackless, but glass will not crack if the draught of the lamp is perfect.

Lantern Slide Making.

AN AMERICAN POINT OF VIEW.

THE first essential in slide making is that the maker should know a good slide when he sees it, and be able to recognise the only kind of negative from which good slides can be made.

A technically good slide, and it is only technique that we are dealing with now, should include every degree of gradation from the deepest dark, which is complete opacity, to the highest of high lights, which is clear glass, that was in the subject; but as there are few of either of those extremes in Nature, there should be as few in the slide. Indeed, there is but a small percentage in any collection that should contain a trace of either. It should be a Mede and Persian law in the mind of the slide maker, that unless there be in the subject an object purely white and without shadow, or purely black and without a touch of reflected light, there shall not be a part of the slide through which at least some of the projecting light shall not pass, or a single spot of clear glass. Professional slide makers are the greatest sinners in this respect, but they have a reason for their sin. They work for the public or the public entertainer, and the lanternist knows that in an exhibition to an ordinary audience it is the hard white and black, the "summer snowiness" or "soot and whitewash" that "brings down the house." But the amateur that works to please himself, and has already done so much to elevate the public taste, should aim at leading to a higher appreciation of true gradation in lantern slides.

Some time ago we (*Amer. Amat. Ph.*) had the pleasure of sitting beside one of New York's well-known artists listening to a lecture by one of New York's popular clergymen on one of his vacation tours, and seeing the slides by which it was illustrated. The slides were generally of the commercial variety, and while they gave a fair idea of the places and people of which the lecturer spoke, and evidently pleased the less cultured of the audience, they brought many a smile to the face of the artist, and not unfrequently something like a sneer on ours. But there was one exception, one slide that was worth going far to see. It was an interior, a part of a cathedral; simply a little corner with a confessional box and a kneeling figure. But the suggestion of

"the dim religious light"

was perfect and the effect almost sublime. A ray of sunlight from an unseen window fell on the figure, and although the black dress was surmounted by a broad white collar, so perfect were the values and the suggestion of coloured light that the one was greyed up and the other greyed down.

When the audience had dispersed my friend said, "Let us go up and congratulate him on the 'penitent,'" and on our doing so he replied, "Well, you amaze me. The fact is that I made that slide myself. On an earlier visit to the cathedral I was so struck by the possibilities of that corner that I induced my wife to dress for the picture and tempted the acolyte to find me an opportunity for the exposure of a plate. As he was nervously afraid of the appearance of some of the powers that be, the exposure was hardly as long as I could have desired, and the slide is so fogged and so unlike the rest of the set that was collected during my tour from some of the best slide makers in the world, including Wilson, York, and Valentine, that I have only shown it once before." Sure enough, the slide was fogged, but only to an extent that made it the beauty that it was, and the exposure had been so suited to the developer as to give every degree of gradation that was in the negative.

Hardly less important than to know a good slide when you see it is to know the kind of negative that will give a good slide. In the first place, it must be one that has got at least a sufficient exposure to give the necessary detail in the shadows, as such parts as are represented by bare glass will in the slide be sufficiently opaque to be simply black on the screen. Then, development must not have been so pushed as to make any of the lights, except the very highest, so opaque as to exclude all of the light employed in printing. In other words, no part of the negative should be completely opaque, except the very highest of high light, and of that, as we said, there is little or none in nature. The most suitable negative is one that is rather on the thin side, full of delicate detail and gradation; the negative, in fact, that will give the most technically perfect print on the modern gelatino-chloride paper.

The knowledge and the negative having been acquired, the next step is to decide as to the developer that is to be employed; as in slide-making, the exposure should be made to suit the developer, not the reverse.

Just what the developer should be is of less importance than that it should be a fixed quantity, nor is there any particular reducer or formula that can be said to be better than any or than all others. All we can say is that the following has with us and with many others answered the purpose admirably:—

Ortol	160	grains.
Potassium metabisulphite ..	80	,,
Potassium bromide	40	,,
Sodium sulphite	2¼	ounces.
Sodium carbonate	1½	,,
Water to make	10	,,

This will make a stock solution, each dram of which contains two grains of ortol, and which, added to seven drams of water, makes our usual developer.

From the foregoing it will be evident that correct exposure is the keynote to success in slide making, and that no effort should be spared to secure it. A writer in *The Camera Club* (English) journal, who is a first-class slide maker, said that he was satisfied if he got one good slide from a dozen plates, but we hardly care to be so extravagant, and therefore, to ascertain just what the right exposure should be under any particular circumstances, conditions of light, plate and negative, we expose one plate in strips, not cutting it, but in a printing frame roughly adapted to the purpose, a piece of ferrotype plate in which is a slit 3 inches by ½ inch being made to slide across the plate to be tested; and making five exposures, two above and two below what we may guess to be about right.

On development, or rather during its course, it is easy to see which of the five is nearest to what is required, and equally so to arrive at what will be absolutely correct. On a correctly exposed plate the deepest shadows will first appear, and be followed in their order of intensity up to all but the highest lights, and notwithstanding the fact that the deposit is cumulative, none of the shadows except the deepest, if there should be such, will be quite opaque before the necessary detail is developed. In other words, if the plate has received a correct exposure and the development has been arrested at the proper time, there will be no clear or bare glass except on the highest high lights and no shadows so dense as not to transmit some of the projecting luminant, except the very deepest of deep shadows, neither of which are found to any great extent in nature, and both of which should be as rarely and as sparingly found in the slides.

Next in importance to correct exposure is the extent to which development is carried. An unwarranted fear of fog induces most slide makers to stop too soon; to stop while most of the lower tones are still bare glass, instead of going on till the shadows have the necessary deposit; and it is all the greater folly to do so, not only because a trace of fog not unfrequently makes all the difference between a good and a bad slide, but should development be found to have been carried too far, it is easy to bring it back to tolerably correct gradation by one or other of the **well-known methods of reduction**—Farmer's, which attacks both the weak and strong parts alike, or the ammonium persulphate, which deals mainly with the denser parts.

But, in spite of care both in exposure and development, it may be that on drying the slide is not just as it should be. The shadows may be all right in their gradation, but what should be merely lights more or less translucent are only bare glass, making what should be a sunny landscape appear on the screen as if covered with snow. In most cases this may be made into a good slide in the following way:—Place the slide and a plate into the printing frame, using the slide as if it were a negative, and expose for a short time to the light. The exposure will depend on the amount of deposit desired, and should be such as when developed and fixed will leave sufficient to give the necessary lowering of the lights when the plate is used as a cover glass.

So far, in dealing with exposure, the reference has been to "printing by contact," the result of which, notwithstanding what has been said to the contrary, is in every respect as good as that from copying in the camera. But as the former method is applicable only where the negative is of a suitable size, or where only a suitable part of a larger negative is wanted, the latter must be employed where reduction or enlargement is necessary.

While the ordinary copying camera, or one of those made for the purpose, costing from 10 to 12 dollars, is doubtless more convenient, the following simple arrangement, which we have employed for years, will be found in every respect as efficient. It consists of our ordinary 5 by 7 inch camera with a 5 inch lens, and the baseboard 25 by 10 inches. The negative holder, with kits, will take negatives from 8½ by 6½ inches down, and the larger sizes may be moved and masked so as to admit of printing from any desired part.

For contact printing artificial light is best, because easily made constant. An ordinary kerosene lamp with a 1 inch wick leaves nothing to be desired, although we now employ an acetylene flame; but for camera copying daylight is preferable. All that has been said about the necessity for correct exposure in contact printing is equally applicable to that by daylight, and it is perhaps a little more difficult to ascertain just what it should be. But as one really good slide is worth dozens that are not so, it is better to use a few plates in seeking for it than to waste many in merely guessing at it.

Lecturers Should Learn Their Lectures.

By A. B.

RECENTLY, when meeting the editor of the Optical Magic Lantern Journal, he asked me if I would give the result of some of my lantern experiences in the form of a short article. As the word *short* was used I will do my best to act up to that little word, and in doing so will give merely a hint, so that he who runs may read, but at the same time the subject can be elaborated and extended into several pages if necessary, so much can be said upon it. I, however, merely intend putting the matter in a nutshell.

Most of those who have listened to a read lecture of the kind found in the little book which usually comes to hand with the hired set of fifty or more slides at the last moment, cannot but feel a certain amount of compassion for the individual who has undertaken the task of giving what he is pleased to call *the lecture*. He invariably struggles through it in such a manner that one cannot help coming to the conclusion that he knows little about the subject. He tells us that such and such a mountain is so many thousand feet high, and informs us that the village lying near the foot has a population of so many thousand, and in common with the majority of the books mentioned goes into a lot of statistics until in the majority of cases the audience get so tired of it that they decide that lantern lectures of this style are not worth turning out for on a cold evening.

No matter the subject, and we will suppose even the dryest of them, it can be made interesting if the lecturer will procure the book of words in good time and devote only one evening to its proper perusal, when he will at the same time, of course, strike out a large proportion and add new notes of his own. This is what should be done, for there is no denying the fact that nine out of ten of the printed lantern lectures are very prosy. Of course every lecturer will go to work in the matter in his own peculiar style, and this is mine. I will, however, first say that I do not append my name to this article, consequently I cannot be charged with egotism in any form. I have made quite a name for giving interesting lectures throughout Great Britain, and now explain the only secret, if such it can be called, in the hope that it will assist lecturers who are not so well endowed with this world's goods as I am.

I simply get the ordinary commercial lantern reading, read it well several times until I understand the subject, then turn it up in the encyclopedia and read everything pertaining to it, and make rough notes with references.

Visit our public libraries

and look up any books on the subject, and last, but not least, run through the last page of a few volumes of the *Family Herald* under the heading of "Random Readings," and select a number of amusing anecdotes applicable to the subject, from which I also make my notes.

Then, armed with the information obtained in the printed lecture—plus information in any books which I happen to possess, plus information obtained in the public library, plus the *Family Herald* anecdotes—I write my own lecture, and in the very act of writing it out learn it more or less. I fit in the proper slides, but not necessarily in the order given in the first instance, give a private rehearsal all alone (without the lantern of course), and in all cases my lectures have proved not only of interest but have been voted a great success, and I have been greatly amused when in reading certain newspapers I have been spoken of as an authority on certain subjects whereas a day or so before I practically knew nothing or little about them. To lantern lecturers I say, "Go thou and do likewise."

Lantern Pictures in the Open Air on New Year's Night.

By **ALEX. D.**

I HAVE received an engagement to exhibit lantern slides in the open air on the evening of the first day in the New Year—nothing, perhaps, extraordinary in that—but strange to say, the projected pictures on this particular occasion have to appear on a screen situated in the open air and at a considerable distance from the dwelling, I may say mansion, from which I am to exhibit. Along the side of the residence of —— is a prolonged glass-house which abuts on the particular house in question, and I am given to understand that the guests are to assemble therein to view the lantern exhibition. I fancy I see readers of this Journal almost shiver at the thought of it. Well, nothing of the kind need trouble one, for I happen to reside in that part of the world where the London winter is summer, and the summer winter, and on the night in question it is quite probable that ladies in evening dress will saunter in the open air beyond the glass-house alluded to.

An exhibition in the open air, however, means that certain appliances must be at hand in case the particular evening happened to be windy. Consequently readers may feel anxious to know

how to erect a screen

in the open, so that the bulging in and out of the screen may not affect the sharpness of the pictures.

I have made all my plans, and this is how I intend preventing the pictures getting out of focus if a gentle zephyr is on hand. I have had two large uprights planned out, these uprights being connected at the top with a cross-piece. From each top end to the bottom of the opposite upright I intend to attach strong wires, one on each side of the poles. These are, of course, double, being the thickness of the poles apart. This presents the appearance of a cross with the wires intersecting in the middle, and between these wires I am to hang my screen. The screen will thus be suspended between cross wires, which will prevent the swaying to and fro of the screen to any great extent, and it is evident that this precaution will prevent the pictures from getting sadly out of focus should there be any wind on this occasion.

I will not further trouble my fellow readers excepting to say that the screen and the lantern will be far apart (which will give a certain latitude in the way of focus) and that the lantern itself will be situated in a small room about six feet square, slightly on one side, and that the rays from the lantern to the screen will pass through the open window.

NEW APPARATUS.

A CAMERA AS THICK AS A SKETCH-BOOK.

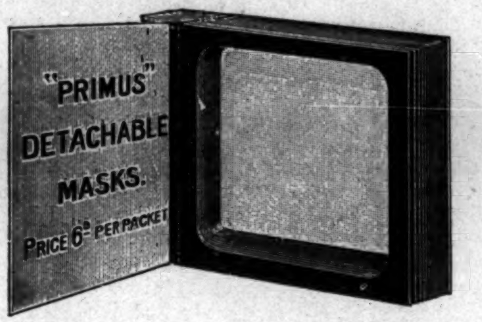
Messrs. Griffin & Sons, Limited, have just placed upon the market a pocket camera termed "The Pocket Folding Cyko." It might be mentioned in passing that it appears to be the fashion to include such letters as K, Y, X, and Z, in the names of photographic apparatus. This particular camera is very light, being made of aluminium, and when closed its thickness is only ¾ of an inch. It takes pictures 3¼ by 2½, opens up in the shape of a wedge, and is furnished with dark slides.

THE NO. 2 BROWNIE KODAK.

A new edition of the well-known Brownie Kodak has been introduced by Kodak, Ltd. This new form is known under the name of the No. 2 Brownie. It is well finished and has a capacity for taking pictures 3¼ by 2¼ in. The camera is provided with two finders, one for horizontal and one for vertical pictures. The shutter is of the ever-set pattern, and the lens is provided with three stops. The sensitive spools can be loaded or unloaded in daylight, and the apparatus forms a nice present for this time of year, and the price, 10s., cannot possibly be considered high.

DETACHABLE LANTERN SLIDE MASKS.

Messrs. Butcher & Sons are supplying lantern slide masks in pads of fifty, put up in book form after the style shown in the illustration; the side of the mask being perforated permits of its being quickly detached from its binding. These masks are made with the following sized openings, and may be obtained either black on both sides, or with black on one side and white on the other :—



No.	1	Circular	$2\frac{7}{8} \times 2\frac{7}{8}$
,,	2	,,	$2\frac{3}{4} \times 2\frac{3}{4}$
,,	3	,,	$2\frac{5}{8} \times 2\frac{5}{8}$
,,	4	,,	$2\frac{1}{16} \times 2\frac{1}{16}$
,,	5	Cushion	$2\frac{11}{16} \times 2\frac{11}{16}$
,,	6	,,	$2\frac{5}{8} \times 2\frac{5}{8}$
,,	7	,,	$2\frac{3}{4} \times 2\frac{1}{2}$
,,	8	,,	$2\frac{7}{8} \times 2\frac{3}{8}$
,,	9	,,	$2\frac{3}{4} \times 2\frac{3}{4}$
,,	10	,,	$2\frac{13}{16} \times 1\frac{15}{16}$
,,	11	Square corners	$2\frac{11}{16} \times 2\frac{11}{16}$
,,	12	,, ,,	$2\frac{9}{16} \times 2\frac{5}{8}$
,,	13	,, ,,	$2\frac{7}{8} \times 2\frac{1}{4}$
,,	14	,, ,,	$2\frac{7}{8} \times 2$
,,	15	,, ,,	$2\frac{7}{8} \times 1\frac{3}{4}$
,,	16	,, ,,	$2\frac{7}{8} \times 1\frac{9}{16}$
,,	17	,, ,,	$3 \times 2\frac{1}{4}$
,,	18	,, ,,	2×2
,,	19	Dome	$2\frac{5}{8} \times 2\frac{3}{4}$
,,	20	,,	$2\frac{3}{4} \times 2\frac{3}{4}$
,,	21	Oval	$3\frac{1}{16} \times 1\frac{15}{16}$
,,	22	,,	$2\frac{3}{4} \times 2\frac{1}{16}$
,,	23	,,	$2\frac{5}{8} \times 1\frac{7}{8}$
,,	24	,,	$2\frac{7}{8} \times 2\frac{3}{8}$

WILLIAMSON'S KINEMATOGRAPH FILMS.

Some exceedingly funny films are being brought out by Messrs. Williamson, 55, Western Road, Hove, Brighton, for whom, we understand, Messrs. Butcher are acting as wholesale agents. The new subjects are termed One Minute Comedy Series, and include A big swallow, The magic extinguisher, Elixir of life, Stop thief, Over the garden wall, Marvellous hair restorer, Are you there, Puzzled bather and animated clothes, and many others. The subjects are treated in a particularly astonishing manner, the following being details of the film of the puzzled bather:—Bather approaches water, and stands considering whether he will venture; feels the water, and deciding to go in proceeds to undress; he finds some difficulty in completing that operation, for as soon as he has divested himself of some of his apparel, it is immediately replaced in some mysterious manner by others, until he has quite a pile beside him. Becoming exasperated at his futile efforts to undress, he plunges in, clothes and all, and immediately returns to the bank relieved of these troublesome clothes. However, just as he is congratulating himself his raiment follows him out of the water, a bit at a time, and assumes its proper place on his person, until he is again fully dressed. He gives up in despair, and walks away, the clothes on the bank following. An extraordinary effect is produced if this film is reversed.

Correspondence.

LONG FOCUS LENSES FOR PRIVATE HOUSES.

To the Editor.

Dear Sir,—Kindly allow this letter to appear in your valuable Journal in order that it may be considered recorded, for I am firmly convinced that within the next few years, perhaps before, an alteration will be made in the lenses commonly fitted and supplied with lanterns of the domestic class. I think I am correct in stating that the average lens supplied with the ordinary lantern has a focus of about 6 inches; I refer to the ordinary lantern sold in shops, fitted up ready for use. This is supposed to be employed in an ordinary private house. In the ordinary private dwelling used by the multitude, it is considered reasonable that the lantern is distant from the screen, say 12 feet, the lantern being so placed that it is behind the audience or guests; this will give a picture of 6 feet in diameter. Now this is far too large to be seen with any degree of comfort at such close range, and I feel convinced that sooner or later this defect will be better known. With a lens of 9 inches focus at the same distance the picture would be 4 feet in diameter and much better illuminated, and at the same time will not try the eyes in the manner that the previous style will do. Consequently, I feel sure that the majority of people will prefer to see a well-illuminated picture of these latter dimensions to that previously stated. This latter can be viewed with much greater ease and seen much better. When dealers wake up to the fact, the ordinary commercial lantern will be fitted with a lens of the focus indicated above. I say without hesitation that many of our lantern-selling opticians are shopticians; they merely know the cost and selling prices, and I well recall the fact many years ago when in conversation with a well-known manufacturer who died about two decades ago, I asked him why he always mounted his meniscus condensers the wrong way about. He said "we always do it that way." I reasoned with him and a trial was made, whereupon he then adopted the proper way of mounting. However, what I wanted to predict was that before long the commercial lantern will as a rule, be supplied with an objective of 9 inches focus instead of the 6 inches now supplied.

I enclose my name and address but merely subscribe myself as

Yours truly,
PROPHET.

PATENT INTELLIGENCE.

Compiled expressly for this Journal by Messrs. W. P. Thompson & Co., Chartered Patent Agents, 322, High Holborn, London, W.C., and at Liverpool and Birmingham, to whom all enquiries should be addressed.

No.	Recent Patent Applications.
23105	15th November, 1901. Benjamin Joseph Barnard Mills. (Auguste Lumiere and Louis Lumiere, France.) Improved screen to be used in the projection of pictures or views.
23564.	20th November, 1901. Paul Mortier. Improvements in cinematograph apparatus. (Date applied for under Patents, etc., Act, 1883, Sec. 103, 2nd May, 1901, being date of application in France.)
24413.	30th November, 1901. Reginald Walter Barker. (Hugo Boettner and Siegfried Sacher, Germany.) Improvements in cinematographs. (Complete.)
25191.	10th December, 1901. Henry Charles Braun and Ernest Esdaile. Improvements in apparatus for displaying moving pictures.
25587.	14th December, 1901. Ladislaus Emanuel Granichstaedten. Improvements in means for preventing fire in kinematographs.

Notes and Queries.

Oxygen writes:—"Some three or four years ago an oxygen generator was invented in which there were four arms which were alternately placed in the flame of a spirit lamp, the said arms being pivoted on a common centre, and at the end of each arm was a receptacle for placing oxygen compound. If I mistake not a patent was taken out for this invention, but as I have never seen it advertised for sale will you please inform me where I can procure one? *Ans.*—We believe a patent was "applied for" a few years ago for such a generator as you speak of, but we have never heard of it being placed on the market. You may be interested in knowing that such an apparatus was exhibited at one of the Manchester Photo Societies just thirty-three years ago, and that a dealer whose business is now extinct brought it out commercially, but with what success we know not. On looking the matter up we find that the 1868 apparatus generated the oxygen into a gasometer, and the latter one into a species of bag.

Amateur.—We fear that you will have to take the information with the usual grain of salt. When a member of Royalty pushes a button and hands the apparatus to an attendant to be recharged and the negative developed and printed from, certain newspapers publish an article upon the subject, and invariably give the button pusher in question the credit of being one of the finest photographers in existence. There is no Royal road to learning. A foreign gentleman of high degree, who some years ago resided in London, was in the habit of thrusting upon the public lantern slides of his own make at every possible opportunity, and the papers invariably spoke of them as excellent; but as a matter of fact they were all positively vile productions, and to buy for exhibition purposes would have been dear at four a penny, unless they were to be exhibited at the time as the works of Art (with a capital A) of Prince ——, when, of course, they would have been cheap at any price.

Alfred Fildes.—For a second-hand lantern such as you suggest try an advertisement in our general column, but be sure you arrange to have the apparatus on approval, as there is a lot of rubbish about just now.

W. C. Furnas (U.S.A.).—Canon Beechey's Trinoptric was at one time in use, but it has long been considered a thing of the past commercially. A few years ago a Liverpool firm (we think Archer & Son, of Lord Street) introduced an improved bi-unial lantern something on the same principle, and it is possible they may be able to supply you; there is no doubt that when nicely made this principle can be used with great advantage.—We are afraid we cannot assist you *re* the emulsion, and would advise you to write to Mr. Tylar, High Street, Aston, Birmingham, as he is in business touch with a maker.—We thank you for your interesting letter and will look forward to the synopsis mentioned, relative to the article spoken of, as the book cannot be obtained here as far as we have been able to ascertain.

C. L. Ernest (Detroit).—The illustration of the projection lens sent is of that made by Messrs. Wrench & Son, of 50, Gray's Inn Road, London, to whom we have handed your letter.

Oil.—Particulars of dissolving with a pair of oil lanterns will be found in this Journal for October, 1889.

W. Gerrare.—It is evident that you have not long been a reader, else you would have seen several articles on stereoscopic projection on the screen. We cannot again enter fully into the matter as you wish, but wou'd refer you to the following numbers of this Journal, where you will find the problem fully dealt with:—May, 1890; September, 1891; October, 1891; November, 1891; November, 1893; December, 1893; February, 1894; March, 1894; January, 1896; February, 1896.

Youlette.—Mr. Scott, who took up the subject of projecting photographs in colours, and about whom you enquire, died some five or six years ago. No one continued his business as far as we know.

Jas. Roberts.—They are now located somewhere in Hounslow, but we do not know the address.

S.—We regret that we cannot supply drawings for making dark slides for cameras. If you want to know anything about lanterns we shall have pleasure in answering you.